CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

SECRET
SECURITY INFORMATION

COUNTRY	Czechoslovakia	REPORT NO.	[redacted] 25X1A
SUBJECT	Czech Silk, Lovosice	DATE DISTR.	19 May 1953
		NO. OF PAGES	6
DATE OF INFO. 25X1C	[redacted]	REQUIREMENT NO.	[redacted] 25X1A
PLACE ACQUIRED		REFERENCES	

25X1X

[redacted]

1. Czech Silk, National Corporation (Ceske hedvabi, narodni podnik), at Lovosice [50-31N-14-04E], produced artificial fibers. It was subordinate to the Central Administration for Artificial Fibers (Hlavni sprava umelych vlaken), a division of the Ministry of Chemical Industry. This enterprise is relatively old. Prior to 1945 its name was the Lovosice Artificial Silk Plant (Glanzstoffabrik Lovosice). [See Annex A for area sketch of this installation.]

2. In the summer of 1952 there were approximately 30 bobbin spinning machines with aluminum bobbins 150 mm. long and 70 mm. in diameter and approximately 36 centrifugal spinning machines. Each of these centrifugal spinning machines had 48 centrifugal spinning pots; each pot measured seven inches in diameter, was driven independently, and reached about 7,000 rpm. All machines were relatively old types. In the summer of 1952 it was intended to install about 12 centrifugal spinning machines for viscose fibers of 1,200 denier. These new machines were to be used for the production of tire cords.

25X1X

3. In the summer of 1952 the plant had approximately 1,500 employees, about half of them men and half of them women. Of this total about 20% were people of German extraction who were employed as manual workers. [redacted] (fnu) SIMUNEK was manager, but in September 1952 he was to be discharged for the poor and steadily deteriorating efficiency of the plant and replaced by a clerk of Jewish extraction from the Ministry of Chemical Industry. [redacted] The plant suffered heavily from a large-scale fluctuation of labor and poor and steadily deteriorating labor morale. The percentage of rejects increased from 7 to 12% during 1952. In September 1952 a rather large group of [redacted] was assigned to work at the plant; they soon came to be regarded as the most conscientious laborers.

25X1A 25X1A 25X1A

SECRET

[redacted]

[redacted] 25X1A

4. Since 1951 the plant had been expanding on a large scale. The reconstruction project, by which the plant's pre-1951 capacity was to be doubled, was scheduled for completion in 1954. The general plans for the expansion were worked out by the firm Development of Chemical Industry, National Corporation (Vystavba chemickeho prumyslu, narodni podnik), and the detailed plans by Stavoprojekt, National Corporation, at Litomerice /5032N-1408E/. Construction work was being carried out by Chemostav, National Corporation, at Lovosice.

25X1X [redacted] The project was directed by Ing. (fnu) NOVAK, who was about 40 years old, married, and a very decent man. He was not a Communist, but managed to hold his position because he was considered an indispensable expert. During World War II he had been employed in Germany at the construction of several viscose fiber plants and had later directed the construction of the new viscose clip plant at Neratovice /5016N-1431E/ which is now called Spolana, National Enterprise. The chief assistants of NOVAK were:

(Fnu) CECH	architect
(Fnu) VASICEK	head of the Machinery Equipment Designing Department
(Fnu) VALERA	head of the Purchasing Department
(Fnu) KOZAK	in charge of controlling the progress of the construction.

5. Viscose Fiber Production was as follows:

a. Cellulose, in the form of square plates, is immersed and heated in a 17% caustic soda solution and thereby changed into an alkali cellulose: $C_6H_{10}O_5 + NaOH = C_6H_9O_5Na + H_2O$

This sodium cellulose, although retaining the original shape of the plates, is now quite soft. Next, the plates are shredded.

b. Sodium cellulose reacts with carbon disulphide (CS_2) to form sodium cellulose xanthate $C_6H_9O_4ONa + CS_2 = SC\langle^{SNa}_{O}(C_6H_9O_4)$

c. The sodium cellulose xanthate is diluted with a weak caustic soda solution, which results in a viscose solution, a yellowish, viscous liquid: $SC\langle^{SNa}_{O}(C_6H_9O_4) + NaOH = SC\langle^{SNa}_{O}(C_6H_8O_3)ONa + H_2O$

This liquid is aged for several hours at a low temperature.

d. The aged viscose solution is led through a pipeline into a pump which extrudes it through a nozzle immersed in a spinning bath. This bath, which has a temperature of 116.6°F (47°C), consists of sulphuric acid, sodium sulphate, zinc sulphate, magnesium sulphate, and a small quantity of carbon disulphide in water. As soon as the viscose solution leaves the nozzle it is regenerated by contact with the spinning bath into cellulose which now has the shape and consistency of a solid filament. $SC\langle^{SNa}_{O}(C_6H_8O_3)ONa + H_2SO_4 \rightarrow C_6H_{10}O_5 + Na_2SO_4 + CS_2$

e. This filament is spun on spinning machines. The yarn resulting from this process is eluted in soft water to reduce its sulphate content, bleached, and then washed again. Afterwards it is rid of water by means of centrifuges and dried in vacuum drying chambers. Finally it is wound onto cones.

f. The entire production equipment was of modern design. The vacuum drying chambers were of Dutch origin.

6. A new arrangement for preparation and supply of the spinning bath has been scheduled under the plant expansion scheme. [redacted] 25X1X It will have four independent pipelines for the preparation and supply of the bath liquid, viz., one line for the spool spinning machines /Annex B, V 1/, another line for the centrifugal pot spinning machines /Annex B, V 2/, a third one for the cord fiber spinning machines /Annex B, K/, and finally a reserve line /Annex B, R/ which in case of need can replace any of the other lines. The pipes will be made of iron and coated inside with a three-millimeter layer of lead. The soda lye pipes will be of iron only. [redacted] the firm in Prague which will produce all these pipes. The containers will be concrete, provided inside with a special ceramic lining, 25X1A a product of the Acidotechna firm in Prague. This arrangement was made, on the basis of an order from the Ministry of Chemical Industry, because of a shortage in lead, which is normally used for the lining of such containers.

7. When this arrangement has been set in operation, the quantity of bath liquid consumed by one spinning unit (one nozzle) in the production of viscose fibers will be 35 lit. per hour for textile fibers and 200 lit. per hour for cord fibers. The new arrangement will be installed in a separate building /Annex A, Point 2 f/, 20 x 30 m. in size, with a basement and three floors. The construction of this building was begun in the Summer of 1952. Underground pipelines will lead from there to the old and the new spinning shops /Annex A, Point 2c and 2d/ and to the cord fiber spinning shop /Annex A, Point 2i/.

8. The equipment of the enlarged plant will consist, among other spinning machines, of approximately 60 spinning machines of the "Nelson Process" type, which has been perfected by the British firm Dobson & Barlow Ltd. This type works continuously and spins, washes, dries, and twists the filament, but does not rid it of sulphur and bleach it. Its spinning speed amounts to 75 m. per minute. /See Encl. C/. In the Summer of 1951 an unidentified designer of the Ceske hedvabi plant was sent to Poland to study these machines in operation. They had been delivered there by UNRRA. Czechoslovakia intends to build these machines herself. The first experimental machine of this type /Encl. C/ was being designed by the Designing Department of Ceske hedvabi. The blueprints were scheduled for completion in the spring of 1953. [redacted] the 25X1A machinery department of the Chemosvit-Svit National Enterprise at Svit will be put in charge of the project.

Annexes A: Industrial Installations in the Area of Lovosice
B: Spinning Bath Preparation at "Ceske hedvabi N.P." Plant

Enclosure: C "Nelson" Continuous Rayon Spinning Machine (1 page) [redacted]

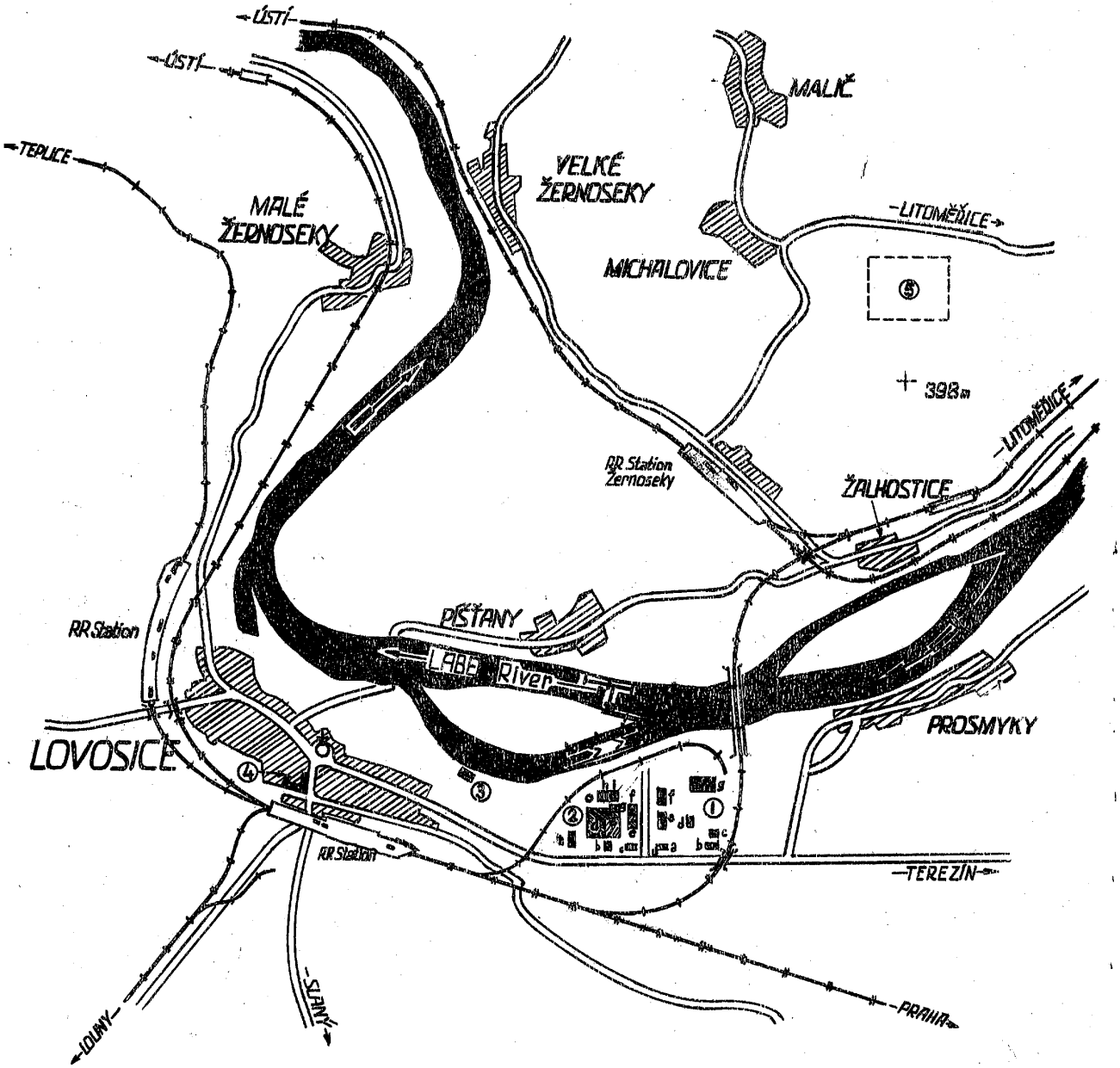
25X1A

[redacted] 25X1A

Annex "A"

INDUSTRIAL INSTALLATIONS IN THE AREA OF LOVOSICE

SCALE 1:25,000



SECRET

[redacted] 25X1A

LEGEND TO Annex A

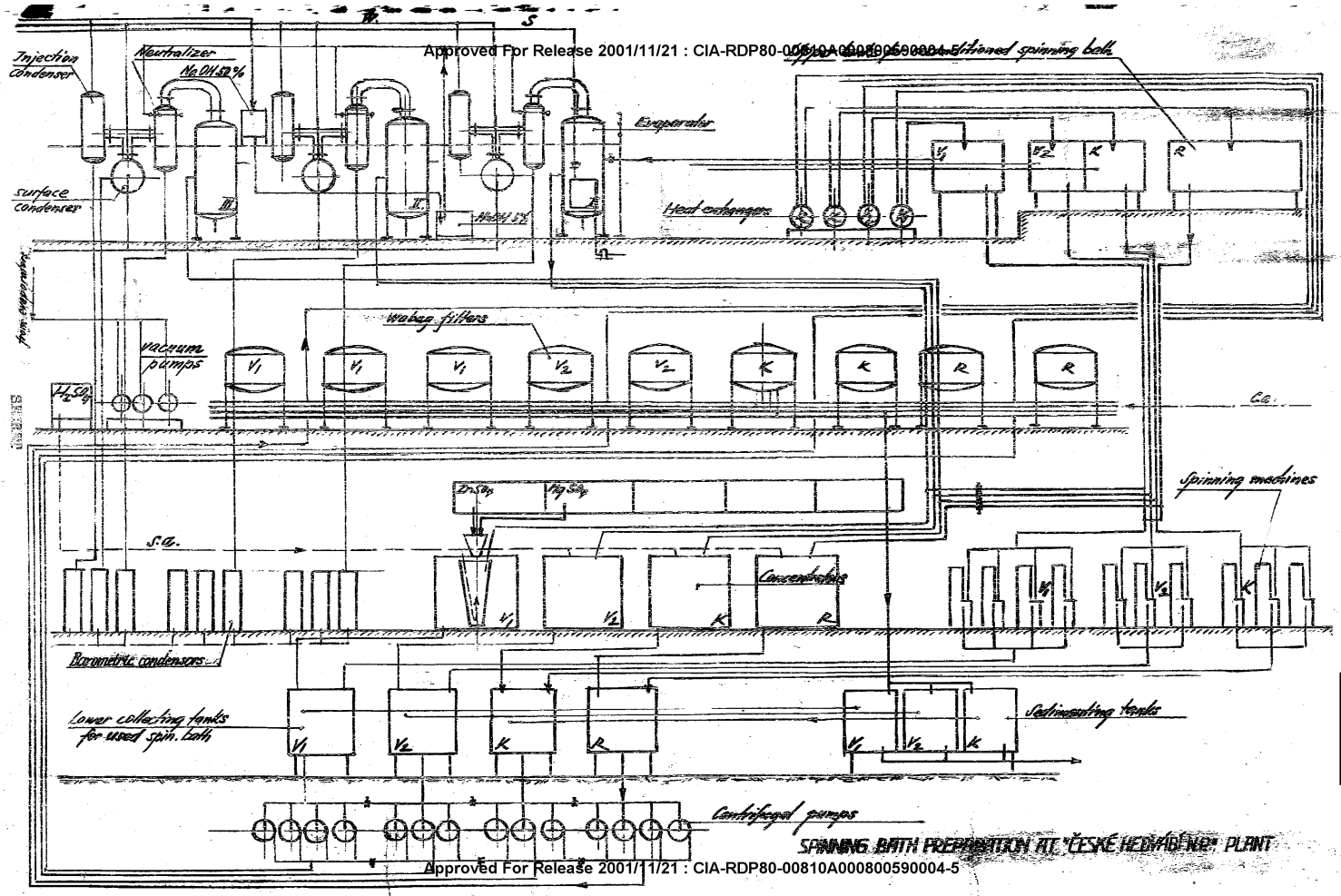
1 - Chemical Plant
- a - New administration building
- b - Three-story building, 20 x 30 m, purpose unknown
- c - Water cooling tower
- d - Unknown
- e - Warehouse
- f - Main production building
- g - Old plant

2 - Ceske hedvabi
- a - Shed
- b - Old administration building
- c - New administration building
- d - New spinning shop
- e - Old spinning shop
- f - Viscose preparing & ageing shop and chemical warehouse
- g - Spinning bath preparing shop
- h - Power plant
- i - Cord fiber spinning shop

3 - Grain silo

4 - Chocolate factory

5 - Underground plant "Richard"



SPINNING BATH PREPARATION AT "ČESKÉ HEDVÁBÍ NP" PLANT

25X1A